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PROJECTS INTERNATIONAL

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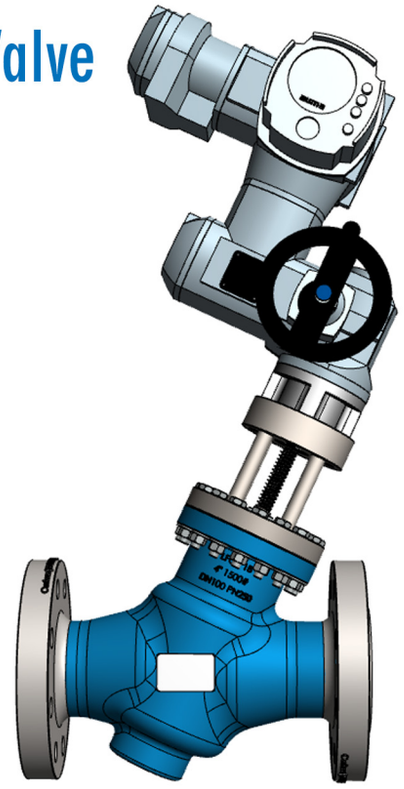
LFC™_1B Electrically Actuated Isolation Valve



Overview:

The LFC™_1B Electrically actuated Isolating valves were designed to be energy efficient with a low flow co-efficient (Cv), simple and easy to operate.

Due to the hydraulically balanced design and low torque requirements the valve requires a relatively small electrical actuator with no external gearbox. This feature saves capital and long-term maintenance costs. Any make of electrical actuator can be fitted on the LFC™_1B electrically actuated isolation valve. The LFC™_1B electrically actuated isolation valves are generally used in pump discharge control, PLC regulated control or any other automated applications.

Low Operating Torque:

The LFC™_1B Electrically actuated isolating valve is hydrostatically balanced to enable easy opening and closing at any pressure and differential conditions. It does not require the use of a gearbox or a by-pass valve to balance pressure between the inlet and outlet. The differential pressures do not affect the operating torque which results in a relatively flat torque curve allowing for the fitment of smaller actuators.

Cv Value & Energy Effeciency Reduced Operating Costs):

One of the primary costs after the initial capital outlay is running costs, especially in a pump station. A valve's Cv refers to the number of US gallons of water per minute at 60F that will flow through a valve with a pressure drop of one psi and is indirectly proportional to the amount of energy consumed to drive water through the valve. Cv should therefore be factored into the running cost of the system as it directly affects pumping cost and energy expense incurred to achieve the pumping volume requirements. Valves with better Cv values offer quantifiable energy savings over time.

Operating Conditions:

These valves are designed to operate in systems with relatively clean media like water or other liquids with a low percentage of suspended solids and chlorides. The valve's operating pH range is 2 - 14 pH.

Simplicity:

The LFC™_1B valve is designed to minimize wearing parts and in effect only has one moving part called the plug. The plug is a piston that is engineered to be balanced. The balanced plug uses the inline fluid pressure to remove the influence of differential pressure on operating torque. As such, the valve operating torque is the torque required to overcome the sum of the friction forces generated between the valve seals and the sleeve plus the weight of the plug (depending on the installation configuration). This torque requirement is not affected by inline pressure variants and as such makes the balanced valves extremely good for actuation applications as well as for isolation valves where manual operation is required. Removal of gearboxes reduces maintenance requirements and improves troubleshooting times.

Low Maintenance Requirement:

All the moving parts of the LFC™_1B Electrically actuated manual isolation valves are manufactured from stainless steel which increases reliability and durability. The LFC™_1B Electrically actuated manual isolation valve requires minimal maintenance, the majority of which, can be conducted with the valve remaining in situ.

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Materials Of Construction & Dimensions:

Part Name	Material Specification
Body - DN50 to DN100	Casting - 431 S/Steel
Body - DN150 to DN400	Casting - BS3100 Gr. A2
Body seat - #1	431 S/Steel
Body seat - #2	F6
Body seat - #3	F12
Flanges	ASTM A105
Plug	431 S/Steel
Plug Seat - #1	UHMWPE
Plug Seat holder - #1	431 or 304 S/Steel
Plug Seat - #2	431 S/Steel
Seal clamp	431 or 304 S/Steel
Sleeve - DN150 to DN400	431 or 304 S/Steel
Top cover	Carbon steel
Spindle	431 S/Steel
Bush holder	Carbon steel
Tripod rods	Carbon steel
Plug Seals	Polyurethane
Shaft Seal	Polyurethane
Wiper Seal	Polyurethane
O-Rings	Nitrile (Buna)

Face To Face Dimensions						
Unit	#600		#900		#1500	
	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)
DN50 / 2"	292	11.50	368	14.49	368	14.49
DN80 / 3"	356	14.02	381	15.00	470	18,5
DN100 / 4"	432	17.01	457	17.99	546	21.50
DN150 / 6"	559	22.01	610	24.02	705	27.76
DN200 / 8"	660	25.98	737	29.02	832	32.76
DN250 / 10"	787	30.98	838	32.99	991	39.02
DN300 / 12"	838	32.99	965	37.99	1130	44.49

Flow Rates:

Flow (ℓ/sec)		5	10	25	35	50	100	150	200	250	300
Pressure Drop (kPa)	DN50	17	81								
	DN80	5	35	90							
	DN100		1,5	30	45	98					
	DN150			2,5	6,5	15	57				
	DN200					2,5	14	42	76		
	DN250						7	17	27	46	65
	DN300										
Flow US gallon/ min		79.25	158.50	396.26	554.76	792.52	1585.03	2377.55	3170.06	3962.58	4755.09
Pressure Drop (psi)	2"	2.47	11.75								
	3"	0.73	5.08	13.05							
	4"		0.22	4.35	6.53	14.21					
	6"			0.36	0.94	2.18	8.27				
	8"					0.36	2. 03	6.09	11.02		
	10"						1.02	2.47	3.92	6.67	9.43
	12"										

Design & Manufacturing Standards:

The The LFC™ _1B electrically actuated valve has been designed in accordance with various international standards as set out below:
ASME Boilers and pressure vessels design code
ANSI B16.10 ANSI B16.3
ANSI B16.34 ANSI B16.37
ANSI B16.5 ANSI N278.1

Available sizes: DN50 / 2" to DN400 / 16"
Pressure rating: up to 25MPa / 3 626 psi
Face to face dimensions: ANSI B16.10 or other, minimum #600

Available end connections: ANSI B16.5, BS4504, BS10, AS/NZS 4331.1 (ISO 7005-1) DIN, all makes of grooved or ring joint couplings, HMP™ Coupling, HMP™ -TE tapered couplings and other as per clients requirement.